

Leading from the top or leading from within? A comparison between coaches' and athletes' leadership as predictors of team identification, team confidence, and team cohesion.

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Abstract

The present study used a sample of team sport athletes ($N = 343$) to investigate to what extent the leadership quality of the coach and the athlete leaders was related to athletes' team confidence and team cohesion. The findings demonstrated that the leadership quality of both coaches and athlete leaders predicted a unique part of the variance of team confidence and team cohesion. In addition, members' identification with the team was demonstrated to be an important mechanism underlying this relation, thereby supporting the Social Identity Approach to Leadership. We conclude that both coaches and athlete leaders can inspire players to identify with their team. In turn, this feeling of 'us', rather than being a group of I's, predicts a stronger confidence in obtaining team goals and fosters the task and social cohesion within the team. When coaches share the lead with their athletes, an optimal team environment can be created.

Keywords: shared leadership, peer leaders, social identity approach, coaching

Introduction

Most leadership studies in sports teams have considered coaches as leaders and athletes as followers [for a review, see 1]. In this regard, it has been demonstrated that coaches, as leaders of the team, are capable of increasing athletes' motivation, inspiring athletes' confidence, and strengthening athletes' identification with their team. In addition to these individual outcomes, coaches can also influence the cohesion among their athletes and the performance of their team [2-4].

However, coaches are not the only leading figures in sports teams. Athletes themselves can also demonstrate leadership behavior and as such contribute to a team's functioning [5]. Although athlete leaders have received considerably less research attention than their coaches, over the past decade, an increasing number of scholars have integrated athlete leadership in their research [for a review see 6]. The inspiring idea of Pearce and Sims [7] that shared leadership is a more useful predictor of team effectiveness than vertical leadership is gaining interest in the field of sport.

Towards Shared Leadership

A qualitative study, investigating the leadership of three successful US college coaches (i.e., Tom Osborne, Bobby Knight, and Joe Paterno) illustrates the practical value of shared leadership in sports teams [8]. During their careers, these three elite level coaches realized the importance of sharing their leadership with their assistant coaches and their athletes. From a top-down leader-centered approach, these coaches moved towards the cutting edge leadership idea of sharing leadership responsibilities. By empowering their athletes with leadership responsibility, they strengthened their athletes' belief that the input of each individual contributed to the team's functioning, which, in turn, caused a higher commitment to the team goals [9]. Later studies added that high-quality athlete leadership is linked with

enhanced role clarity, higher satisfaction, better communication, higher team cohesion, and improved performance [5, 10, 11].

When looking at athlete leadership, it is important to keep in mind that a team captain is not the only one who can take up a leadership function. Also players without a formal leadership role can obtain a leadership status through natural interactions with their teammates [12]. Previous research has shown that in most teams these informal leaders, rather than the team captain, are perceived as the real leaders within the team [13, 14]. When we refer to athlete leaders in the present manuscript, we therefore refer to the athletes perceived as real leaders by their teammates, regardless of whether or not they are appointed as team captain.

Building upon previous leadership categorizations [12, 15], Fransen, Vanbeselaere et al. [13] distinguished between four different leadership roles that athletes can occupy; two leadership roles on the field, namely the *task leader* (who provides tactical instructions to his/her teammates) and the *motivational leader* (who is the biggest motivator on the field), and two leadership roles off the field, namely the *social leader* (who cares for a good team atmosphere outside the field) and the *external leader* (who handles the communication with club management, media, and sponsors). Although it is possible that one player in the team occupies all four leadership roles, in 98% of the sports teams leadership appeared to be shared among multiple players [13].

Leader's Impact on the Team's Functioning

The present research focuses on team confidence and team cohesion as outcomes of leadership quality. Both team confidence and team cohesion have been cited as key constructs characterizing the group dynamics in sports teams [16]. Most research has focused on the outcomes of these group dynamical constructs by demonstrating that high levels of team

confidence and team cohesion are likely to produce better performances [17-19]. However, only little is known about the sources of these constructs.

Therefore, the present study will examine both coach and athlete leadership as antecedents of team confidence and team cohesion. Loughead and Hardy [20] noticed that coaches and athlete leaders demonstrated different leadership behaviors. More specifically, coaches were perceived as exhibiting training and instruction and autocratic behaviors to a greater extent than athlete leaders, whereas athlete leaders exhibited more social support, positive feedback, and democratic behaviors than coaches. Given these differentiating leadership behaviors of coaches and athlete leaders, also a unique relation with team confidence and team cohesion can be expected. We first outline the research knowledge so far with regard to the differential impact of coaches or athlete leaders on both team confidence and team cohesion.

Leaders' impact on team confidence. In sports teams, two types of team confidence can be distinguished; (1) *collective efficacy*, referring to athletes' confidence in the team's abilities to function well (e.g., effective tactical communication); and (2) *team outcome confidence*, referring to athletes' confidence in the team's chances to obtain an outcome, for example winning the game [21]. We will use the term *team confidence* as overarching construct that encompasses both collective efficacy and team outcome confidence.

A cross-sectional study with soccer and basketball players revealed that modeling behavior is perceived as an important source of both types of players' team confidence [22]. More specifically, both coaches' and athlete leaders' expressions of team confidence were perceived as very important predictors of athletes' collective efficacy and team outcome confidence. With respect to coach leadership, only sparse research has been conducted to link leadership behaviors to athletes' team confidence. The few research studies that do exist on this topic demonstrated that coach behaviors, such as training and instruction, democratical

behavior, social support, and positive feedback were positively related with athletes' team confidence [4, 23].

With regard to athlete leadership, several cross-sectional studies corroborated the link between athlete leadership behavior and team confidence [10, 13, 24, 25]. Two recent experimental studies, one in a basketball context and one in a soccer context, investigated the influence of the expression of team confidence by the athlete leader [26, 27]. The findings revealed that when the athlete leader expressed high confidence in his team, the leader's behavior instigated a team confidence contagion throughout the team, thereby inspiring the other players to be more confident in the team's abilities as well. In turn, team confidence had a positive effect on the athletes' performance. In addition, athlete leaders could also negatively influence their teammates by expressing low team confidence. More specifically, it was found that when the athlete leader expressed that he had lost all confidence in the team, his teammates' team confidence decreased concurrently, thereby causing performance decrements.

Leaders' impact on team cohesion. Team cohesion can be divided in two facets, namely task cohesion and social cohesion. While task cohesion refers to the shared commitment among team members to achieve a common goal, social cohesion refers to the nature and quality of the emotional bonds of friendship and closeness among team members. It has been shown that coach behaviors can significantly impact team members' task and social cohesion. For example, the coach's perceived justice was shown to be positively associated with both task and social cohesion [2]. In addition, various coach behaviors including training and instruction, social support, democratic behavior, and positive feedback [measured by the Leadership Scale for Sports; 28] have been found to be strongly related to task cohesion. By contrast, social cohesion was only predicted by social support displayed by the coach [29].

Besides the coach, also athlete leaders are crucial actors in fostering the team's cohesion. In this regard, it was found that athlete leadership behaviors, such as training and instruction and social support, positively influenced both task and social cohesion [30]. Also Loughhead, Fransen et al. [11] highlighted the importance of high-quality athlete leadership for both task and social cohesion.

Other studies reported different predictors for task and social cohesion. Price and Weiss [25], for example, demonstrated that perceptions of athlete leadership were associated with social cohesion, but not with task cohesion. In contrast, another study revealed that team captains were able to foster high task cohesion in the team by demonstrating genuine concern for the needs and feelings of their teammates, by expressing high performance expectations for their team, and by fostering acceptance of the group goals and teamwork [31]. Furthermore, it was shown that athlete leadership behaviors such as high performance expectations and individual consideration predicted solely task cohesion, while fostering acceptance of group goals and promoting team work significantly predicted both task and social cohesion [32].

A correlational study comparing leadership behaviors of coaches and athlete leaders revealed that both athlete and coach leadership were equally important for task cohesion, while athlete leadership was more strongly related to social cohesion than was coach leadership [33]. These findings concur with recent research showing that both coaches and athlete leaders are seen as high-quality task leaders for their team, while athlete leaders are perceived as better social leaders than their coaches [14].

How 'Us' Can Impact How 'I' Feel

As outlined above, the literature provides ample support for the impact of leaders on the confidence and cohesion within their team. However, only sparse research has been conducted on the mechanisms underpinning these relationships. The Social Identity Approach

to Leadership [34] suggests that group members' identification with their team intermediates leaders' ability to impact the team's functioning. The Social Identity Approach [35] asserts that people can define themselves depending on the social context, either in terms of their personal identity (i.e., in terms of 'I', as unique individuals), or in terms of their social identity (i.e., in terms of 'us', as group members who share goals, values, and interests with other team members). In its recent application to leadership, Haslam, Reicher et al. [34] argued that leaders are able to exert influence on their team members to the extent that they make their social identity salient and, as a result, foster a collective sense of 'us'.

Several studies provided support for this theoretical reasoning by showing that athlete leaders can influence teammates' confidence and foster their efforts by strengthening members' identification with the team [24, 26, 27, 36]. With regard to coaches, it has been shown that team identification mediated the relation between the procedural justice of the coach and both task and social cohesion in top-level sports teams [2]. In other words, when athletes perceived their coach's decisions as fair, they tended to identify more strongly with the team, which, in turn, fostered their perceptions of the task and social cohesion within the team.

The Present Study

To our knowledge only two studies have examined the leadership of coaches and athletes concurrently. As outlined above, Loughhead and Hardy [20] revealed that coaches and athlete leaders demonstrated different leadership behaviors. However, the authors did not examine the impact of these differentiating behaviors on group dynamical constructs such as team confidence or team cohesion. Price and Weiss [33] on the other hand did examine the effect of coach and athlete leadership behavior on team confidence and team cohesion. Their findings revealed that coach leadership was more predictive than athlete leadership for team confidence, whereas athlete leadership was more strongly related to social cohesion than

coach leadership, and both athlete and coach leadership were equally important for task cohesion. However, these authors did not study the relationships between team confidence and team cohesion, as a result of which no indirect effects could be examined. Moreover, the authors suggested that models in which mediating variables are considered might provide further insight into leadership effectiveness.

In contrast to most previous studies, which studied either the impact of the coach or the impact of the athlete leaders, the present study aimed to examine the concurrent influence of coach and athlete leadership on team identification, team confidence, and team cohesion (Aim 1). In addition, the present study went beyond mere description and also sought to explain the mechanisms through which leaders' impact occurs (Aim 2).

Aim 1 – The relative impact of coach and athlete leadership. Our first aim was to examine the concurrent relation of coach and athlete leadership with team identification, team confidence, and team cohesion. Although the influence of the coach and athlete leaders on team identification has not been examined simultaneously so far, previous research did provide support both for the relation between coach behavior and team identification [2] and for the relation between athlete leadership and team identification [24, 26, 27]. Therefore, we expected that the leadership quality of both coaches and athlete leaders would be related with athletes' team identification (H1a). Furthermore, in line with previous findings of Price and Weiss [33], we expected that coach leadership quality would be more predictive for athletes' team confidence than athlete leadership quality (H1b). Finally, based on previous research on team cohesion [14, 33], we expected that coach leadership would be more important for task leadership, while athletes' leadership quality was expected to be more strongly related to social cohesion (H1c).

Aim 2 – Mediating mechanisms explaining leaders' impact. In order to obtain a better understanding of how leaders impact their team's functioning, we will first investigate

how the different group dynamical constructs included in the present study (i.e., team identification, team confidence, and team cohesion) are interrelated with each other. Previous research already demonstrated that athletes' identification with their team positively influenced both team confidence [24, 26, 27] and team cohesion [2]. Several studies already demonstrated a significant relationship between both constructs [37, 38]. Heuze, Bosselut and Thomas [39] provided more information on the causality of this relation by conducting a longitudinal study with elite handball teams. Their results revealed that athletes' team confidence predicted athletes' perceptions of team cohesion, rather than vice versa. In line with these findings, we hypothesized that athletes' team identification is positively linked with their team confidence, which in turn predicts athletes' perceptions of their team's cohesion (H2a).

It should be noted however that the literature investigating the link between team confidence and team cohesion has found differential results for task and social cohesion. More specifically, whereas team confidence appeared to be strongly related to task cohesion, its relationship with social cohesion was either small or absent [39-43]. In line with these previous findings, we expected that also in the present study team confidence is a strong predictor of task cohesion, but has no predictive power for social cohesion (H2b).

After demonstrating the structural relations between these group dynamical constructs, we will investigate the mediating role of team identification underpinning both coach's and athlete leaders' impact on the team functioning. Previous research provided support for the mediating role of team identification in explaining the impact of athlete leaders on teammates' team confidence [24, 26, 27]. With regard to coach leadership, it was shown that team identification mediated the coach's impact on team cohesion [2].

Although to date no studies exist that support the mediating role of team identification to explain athlete leaders' impact on team cohesion or coaches' impact on team confidence,

we expected that the observed effects could be transferred from athlete leaders to coaches and vice versa. According to the Social Identity Approach to Leadership [34], group members' identification with their team underpins the extent to which leaders can impact the team's functioning, regardless of whether it concerns athlete leaders or coaches. Therefore, we expected that team identification would act as a mediator, explaining the impact of coach and athlete leadership quality on both team confidence and task cohesion (H3). All postulated hypotheses are visualized in Figure 1.

Method

Procedure

A research assistant attended a training session of the participating teams to inform the players about the purpose of the study. In order to allow players to obtain a more complete insight in the team dynamics of their team, we administered the study in all teams during the second half of the season (January – March). Informed consent was obtained from all participants and confidentiality was guaranteed. As the participants filled out the questionnaire, the research assistant was present to answer all questions of the participants. The APA ethical standards were followed in the conduct of the study and players could withhold their participation at any time. No rewards were given for participation in the study.

Participants

In total, 25 complete teams participated (i.e., 8 soccer teams, 8 volleyball teams, and 11 handball teams), yielding a response rate of 83% of the contacted teams. Within each sport, we selected both male and female teams, either active at elite level (i.e., national level) or active at lower competition levels (i.e., provincial or regional level). In total, 343 athletes participated, who were on average 24.5 ($SD = 7.47$) years old (ranging from 14 to 64 years old, with 85% of the participants being between 18 and 32 years old). The participants had on average 15.3 ($SD = 7.02$) years of experience in their sport and played already 6.3 ($SD = 6.9$)

years for their current team. Detailed information on participants' sex, sport, and competition level is provided in Table 1.

The data of the present manuscript have been used together with the data of another study for three other manuscripts [11, 14, 44]. However, these manuscripts addressed clearly distinct research questions, which required a different methodology (i.e., social network analysis) and different variables of interest.

Measures

Athlete leadership quality. Fransen, Vanbeselaere et al. [13] distinguished between four different leadership roles; two roles on the field (i.e., task and motivational leader) and two roles off the field (i.e., social and external leader). In their study, the respondents often did not recognize the external leader in their team. In addition, the external leader was perceived as the least important leader of the team. Moreover, the external leader is focused on the external representation of the team and is therefore less focused on the confidence and cohesion among the team members than the other three leaders, who are more involved with the intra-team relations. Taken together, including the quality of the external leader would not only reduce the amount of useful responses, it would also create a bias of the total perception of intra-team athlete leadership quality. Consequently, we decided to exclude the external leader of our analysis.

To describe the other three leadership roles (i.e., task, motivational, and social leadership), we adopted the definitions proposed by Fransen, Vanbeselaere et al. [13]. After presenting a description of a particular role, participants were asked which player in their team corresponded best with this role. In each role, only one player could be ascribed as a leader, but one and the same player could occupy different leadership roles.

Next, we assessed the perceived leadership quality of the assigned leaders by a single-item measure for each leadership role, in line with previous research [e.g., 24]. For example,

with regard to task leadership, participants had to indicate whether the appointed task leader fulfilled his/her role as a task leader very well, on a 7-point Likert scale ranging from -3 (*very poor*) to 3 (*very well*). Likewise, participants were asked to rate the perceived quality of the motivational and social leader, with respect to their specific role fulfillment. A single-item measure was used to assess athlete leadership quality, because previous research argued for a higher ecological validity of these measures [24, 45, 46].

Coach leadership quality. In addition to the athlete leadership quality, we also asked participants to rate the leadership quality of their coach. In order to allow a comparison between coach and athlete leadership, we opted for a similar assessment. More specifically, participants were asked to rate the extent to which their coach fulfilled his/her role as a task, motivational, and social leader well. Answers were given on a 7-point Likert scale ranging from -3 (*very poor*) to 3 (*very well*) and proved to be consistent within participants (Cronbach's $\alpha = .83$).

Team identification. Participants' identification with their team was measured with a five item-scale [47]. An example item is: "I am very proud to be a member of the team." Previous research within a sports setting revealed this scale to be internally consistent [e.g., 13, 24]. Participants assessed these items on a 7-point Likert scale ranging from -3 (*strongly disagree*) to 3 (*strongly agree*). Also in the present study the internal consistency of this identification scale proved to be excellent (Cronbach's $\alpha = .91$).

Team confidence. Previous research distinguished between two types of team confidence; confidence in the team's abilities to function well (i.e., collective efficacy) and confidence in the team's chances to obtain their team goals such as winning the game [i.e., team outcome confidence; 21]. In line with the authors' guidelines, collective efficacy was measured by the Observational Collective Efficacy Scale for Sports [OCESS; 21]. The OCESS is a five-item measure that assesses participants' confidence that their team has the

ability to function well. An example item is: “Rate your confidence that the players in your team will encourage each other during the game.” The five items were scored on a scale, anchored by 1 (*not at all confident*) and 7 (*very confident*). In line with previous research [26], the OCESS proved to have a good internal consistency in the current study (Cronbach’s $\alpha = .82$).

With regard to team outcome confidence, participants were asked to assess the extent to which they believed that their team would succeed that particular season to achieve their goals. Previous studies have used either the individual-oriented stem (“*I believe that our team...*”) or the team-oriented stem (“*Our team believes that we...*”). Because there are arguments for both stems [for a review see 48], we decided to include both stems in the present study. Participants were asked to rate both items on a 7-pt. Likert scale, ranging from - 3 (*strongly disagree*) to 3 (*strongly agree*). Our results revealed that this scale had an excellent internal consistency (Chronbach’s $\alpha = .91$).

Team cohesion. Participants’ team cohesion was measured using the Group Environment Questionnaire [GEQ; 49]. The GEQ distinguishes between members’ perception of the task cohesion and the social cohesion within the team. Task cohesion refers to an athletes’ belief about the team closeness, similarity, and bonding around the group’s task (e.g., “Our team is united in trying to reach its goals for performance”) and to athletes’ feelings about their personal involvement in shared group goals and productivity (e.g., “This team gives me enough opportunities to improve my personal performance”). The nine items assessing the team’s task cohesion resulted in an internally consistent composite score for task cohesion (Cronbach’s $\alpha = .86$).

Social cohesion, on the other hand, refers to athletes’ beliefs about the team closeness, similarity, and bonding as a social unit (e.g., “Members of our team stick together outside of practices and games”) and to athletes’ impression of social interactions and personal

acceptance within the group (e.g., “For me, this team is one of the most important social groups to which I belong”). The nine items assessing the team’s social cohesion resulted in an internally consistent composite score for social cohesion (Cronbach’s $\alpha = .88$). In line with previous guidelines of Carron, Widmeyer et al. [49], participants answered the items pertaining to both task and social cohesion on a 9-point Likert scale with 1 (*strongly disagree*) and 9 (*strongly agree*) as anchoring points.

Results

Descriptive Statistics

A confirmatory factor analysis (CFA) on team identification, team outcome confidence, collective efficacy, and task and social cohesion revealed a good factor structure ($\chi^2/df = 2.28$; $CFI = .96$; $TLI = .95$; $RMSEA = .06$; $pclose = .04$; $SRMR = .05$). Also at high and low performance level separately, this CFA yielded a good fit. Likewise, for each sport separately, an adequate factor structure was confirmed. The exact fit indices of the model at high and low performance level, as well as for the different sports can be found in Appendix A.

Using a χ^2 -difference test in a multi-group CFA, our measurement model without constraints was compared with the same model in which the measurement coefficients were constrained to test its invariance over groups. The factor structure appeared to be metrically invariant over different sports ($\Delta\chi^2 = -31.19$; $\Delta df = 22$; $p = 1.00$). However, between both playing levels a marginally significant difference was detected ($\Delta\chi^2 = 20.87$; $\Delta df = 11$; $p = .04$). Path by path analysis revealed a small difference in the factor loading of team identification item number 5: at high level $\beta = .73$ ($p < .001$) and at low level $\beta = .82$ ($p < .001$). This was the only factor loading that differed between the unconstrained and constrained models. When only the loadings of this item are allowed to differ, no other factor loadings differed between players at high and low performance level ($\Delta\chi^2 = 16.96$; $\Delta df = 10$;

$p = .08$). Moreover, when we additionally constrained the covariance between the latent factors, again no significant differences emerged ($\Delta\chi^2 = 16.96$; $\Delta df = 10$; $p = .08$). We therefore conclude that our observed data adequately represent the factors of interest and are metrically invariant over performance levels and sports. In addition, when also the quality of the coach's leadership and athletes' leadership was added, CFA still revealed a good factor structure ($\chi^2/df = 1.73$; $CFI = .94$; $TLI = .92$; $RMSEA = .08$; $pclose = .01$; $SRMR = .06$). The means, standard deviations and correlations between all the included variables are presented in Table 2. The possibility of outliers in the dataset was considered and tested using the algorithm for multivariate outliers by Billor, Hadi and Velleman [50]. The results based on Mahalanobis distance revealed that none of the observations outreached percentile 15 on the chi-square distribution.

Aim 1 – The Relative Impact of Coach and Athlete Leadership

To test the relative impact of coach and athlete leadership on the different outcome variables, we expanded the initial CFA model by integrating both the coach's and athletes' leadership quality as predictors of the constructs of interest. As such, we tested the predictive value of both the coach's and athletes' leadership quality on each of the five outcome variables (i.e., team identification, team outcome confidence, collective efficacy, and task and social cohesion) without assuming any structural relation between these five constructs. The model provided a good fit to our data ($\chi^2/df = 1.68$; $CFI = .94$; $TLI = .93$; $RMSEA = .06$; $pclose = .04$; $SRMR = .06$), thereby allowing us to compare the relative contribution of coach's and athletes' leadership. The standardized beta regression weights (β) and their bias-corrected 90% confidence intervals (CI) are presented in Table 3.

In line with H1a, coach and athlete leadership quality both significantly predicted athletes' team identification, although it should be noted that the predictive value of coach leadership quality was stronger than the predictive value of athlete leadership quality. With

regard to team confidence, our findings only partly confirm H1b stating that coach leadership quality would be more predictive for athletes' team confidence than athletes' leadership quality. More specifically, our findings demonstrate that although coach leadership quality is more strongly linked to athletes' team outcome confidence, athlete leadership quality is the only significant predictor of athletes' collective efficacy. Finally, with regard to team cohesion, our findings confirm H1c that coach leadership quality is more predictive than athlete leadership quality for athletes' perception of the task cohesion within their team. However, in contrast with H1c, coach leadership quality was also more strongly related to social cohesion, although also athlete leadership quality predicted a unique part of the variance in social cohesion.

Furthermore, from the correlations presented in Table 2, it can be derived that the leadership quality on each particular leadership role of both coach and athlete leadership is significantly related with team identification, team confidence, and team cohesion. Only one exception emerged; the athlete's leadership quality as a task leader was not related with athletes' team outcome confidence.

Aim 2 – Mediating Mechanisms Explaining Leaders' Impact

Relationships between the group dynamical constructs. As outlined in Hypothesis 2a, we expected that team confidence (i.e., collective efficacy and team outcome confidence) would mediate the relationship between team identification and team cohesion (i.e., both task and social cohesion). In line with Hypothesis 2a, our data provided good support for the structural model, which is presented in Figure 2 ($\chi^2/df = 2.28$; $CFI = .96$; $TLI = .95$; $RMSEA = .06$; $pclose = .04$; $SRMR = .05$). In addition, Hypothesis 2b was confirmed because both types of team confidence were more strongly linked with task cohesion than with social cohesion. Furthermore, separate analyses with regard to performance level revealed that the data fitted both the model for the players active at a high level and the model for the players active at a

low level. Likewise, an acceptable to good fit to our data could be obtained for each sport separately. The exact fit indices for both high and low performance level and for the different sports can be found in Appendix B.

Previously, we already showed our observed data to be metrically invariant over levels and sports. Assuming this metrical invariance in this structural model, no difference could be detected when also constraining the structural coefficients. The regression weights of all structural paths did not differ significantly between the two performance levels ($\Delta\chi^2 = 9.45$; $\Delta df = 8$; $p = .31$), nor between the three sports ($\Delta\chi^2 = 20.84$; $\Delta df = 16$; $p = .18$). Consequently, Hypothesis 2 could be confirmed at high and low performance level and in each sport. Finally, we also tested an additional constraint on the residual variance of the predicted latent constructs (structural error). The residual variance did not differ between the two performance levels ($\Delta\chi^2 = 12.04$, $\Delta df = 6$, $p = .06$), but it did appear to be different between the three sports ($\Delta\chi^2 = 32.16$, $\Delta df = 12$, $p < .01$). Further invariance analysis revealed that no single structural error term could account for this difference.

The mediating role of team identification. We hypothesized that the coach's and athletes' leadership would affect players' confidence and cohesion through a direct effect on team identification (H3). In an overarching model as presented in Figure 3, the total effect of the quality of coach's and athletes' leadership on the outcome variables could be assessed while accounting for the structural relation between the outcome variables. However, with only team identification being directly predicted by the coach's and athletes' leadership quality, SEM results revealed a limited fit of our data to this structural model ($\chi^2/df = 2.19$; $CFI = .90$; $TLI = .87$; $RMSEA = .084$; $pclose = .00$; $SRMR = .093$). Nonetheless, modification indices revealed that a good fit could be obtained if two additional direct effects were included in the model: one direct pathway from athletes' leadership quality to collective efficacy and one direct pathway from the coach's leadership quality to team outcome

confidence ($\chi^2/df = 1.74$; $CFI = .94$; $TLI = .92$; $RMSEA = .07$; $pclose = .01$; $SRMR = .07$). It seems reasonable to add these two pathways to the model, considering that previous research revealed only a partial mediation of team identification in the relation between leadership quality and team confidence [24, 26].

The total effects of coach's and athletes' leadership quality on the group dynamical construct when accounting for the structural hierarchy between team identification, confidence, and cohesion are presented in Table 4. In line with H3, the study findings confirmed that team identification fully mediated the relation between both coach and athlete leadership quality and task and social cohesion. However, with regard to team confidence, the results only partly confirm H3. More specifically, it was found that team identification partially mediated the impact of the coach on team outcome confidence, but did not act as a mediator in the relation between athlete leadership quality and athletes' collective efficacy.

It should be noted that only 168 participants completed all variables included in the model. This implies that in the final model including the quality of leadership, the power of our analysis was reduced compared to the previous model (Figure 2), which included 328 cases. One might argue that the restricted power could have confounded both the model fit and the insignificant regression weights. First, with respect to the model fit, we argue that the 168 cases still exceed the minimum 5:1 cases-to-item ratio [51]. In addition, the CFI and TLI, which are both relative to sample size, exceed the threshold of .90 [52]. Finally, for 168 cases and 189 degrees of freedom, the chance of finding a RMSEA of 0 that is actually higher than .08 is less than 1% [53]. Second, with respect to the regression weights, we acknowledge that the fact that we had only 168 usable cases might have resulted in a lack of power to detect a true insignificant regression weight. Although the relation of team outcome confidence with social cohesion was also not significant in the first model (presented in Figure 2), this was not the case for its relation with task cohesion ($\beta = .23$, $p < .001$). Moreover, a non-hierarchical

linear regression with the predicted factor scores, which were calculated even in the case of missing variables, indicates that there might be a unique effect of team outcome confidence on task cohesion ($\beta = .35, p < .001$). It should be noted, however, that this relation is weaker than the relation between collective efficacy and task cohesion ($\beta = .61, p < .001$).

Discussion

The present study investigated to what extent the leadership quality of the coach and the athlete leaders was related to athletes' team confidence and their perceptions of the cohesion in their team. Furthermore, the study went beyond description and sought to explain the mechanism through which leaders influenced the team's functioning.

The Relative Impact of Coach and Athlete Leadership

Our first aim was to investigate the concurring influence of both coach and athlete leadership quality on the different outcome variables. In line with H1a, the findings demonstrated that the leadership quality of both the coach and athlete leaders significantly predicted athletes' team identification. This finding corroborates previous research suggesting that leaders can influence the extent to which athletes identify with their team [2, 24, 26, 27, 36].

With regard to team confidence, our hypothesis (H1b), which was based on previous findings of Price and Weiss [33], was only partly confirmed. However, we moved beyond their work by differentiating between team outcome confidence and collective efficacy. The results revealed contrasting findings for the link between leadership and both types of team confidence. More specifically, it was shown that coach leadership quality predicted athletes' team outcome confidence, whereas athlete leadership quality predicted teammates' collective efficacy.

The relation between the perceived leadership quality of the coach and team outcome confidence can be explained by the fact that most team goals are set by the coach. Even when

team goals are set in consultation with the group, coaches still take their responsibility to explicate these goals and translate them into practice. Therefore, it is plausible that the more athletes perceive their coach as a good leader, the more they will be confident in their team's chances to actually reach these goals (i.e., team outcome confidence).

Athlete leaders, on the other hand, appeared to be more decisive for athletes' confidence in the abilities of their team to function well. This finding aligns with previous research showing that the positive relation between athlete leadership quality and collective efficacy was stronger than its relation with team outcome confidence [24]. Although both types of team confidence have been positively linked with team performance, athletes' confidence in the team's abilities (i.e., collective efficacy) has been shown to predict the team's performance to a greater extent than athletes' confidence in obtaining the outcome (i.e., team outcome confidence) [17]. Furthermore, the team's belief in the process is much more controllable than the team's belief to win, which is more susceptible to external factors such as the opponent, dubious referee decisions, or a lucky goal. Given the more controllable nature of collective efficacy and its stronger link with performance, we thus suggest that the impact of the athlete leaders on teammates' team confidence can be considered as more decisive than the impact of coaches.

Finally, with regard to team cohesion, it was found that coach leadership quality was more predictive than athlete leadership quality for athletes' perception of the task cohesion within their team, thereby confirming H1c and previous research findings [33]. However, in contrast with H1c, coach leadership quality was also more strongly related to social cohesion, although also athlete leadership quality did predict a unique part of the variance in social cohesion.

When also taking into account the indirect effects (through team identification and collective efficacy), the total predictive power of athlete leadership quality on both task

cohesion ($\beta = .69$; $p < .001$) and social cohesion ($\beta = .67$; $p < .01$) is significantly higher (when taking into account the 95% confidence intervals) than the predictive power of coach leadership quality ($\beta = .26$; $p < .001$ for task cohesion; $\beta = .21$; $p < .01$ for social cohesion). The main difference between coaches and athlete leaders lies in the indirect effect of athlete leaders through their impact on collective efficacy, which in turn impacts task and social cohesion.

Mediating Mechanisms Explaining Leaders' Impact

The present study went beyond mere description and attempted to explain the mechanisms underlying the impact of the leader on the team's functioning.

The relations between the group dynamical constructs. First, we examined the relations between the different outcome variables. In this regard, it was established that team identification positively influenced both collective efficacy and team outcome confidence, which corroborates previous research [24, 26, 27]. Indeed, athletes who identify with their team are more likely to attribute more positive qualities to their team. As such, they will be more confident in the team's abilities to function optimally and to obtain their goals.

In line with the work of Heuze, Bosselut et al. [39], we found that athletes' team confidence predicted athletes' perceptions of the team cohesion. Moreover, team confidence was demonstrated to mediate the impact of team identification on team cohesion. Together these findings support H2a, stating that athletes' team identification is positively associated with athletes' team confidence, which in turn predicts their perceptions of the team cohesion. In contrast to earlier findings of Spink [37], the observed relationships between the constructs were not only valid for elite teams, but also for recreational teams. In addition, consistency was observed across the different sports.

Most previous studies found a significant relation between team confidence and task cohesion, but the relation with social cohesion was small or absent [39-43]. The present

findings corroborate these findings and H2b by demonstrating that the positive relation between both types of team confidence and task cohesion was stronger than their relation with social cohesion. It should be noted though that in contrast with most previous studies, collective efficacy was shown to be significantly linked with social cohesion. In other words, having confidence in the team's abilities to function optimally does strengthen athletes' feeling of bonding and closeness with their teammates.

Team identification underpinning leaders' impact on the team functioning. The present study advances upon previous studies by moving beyond descriptive analyses to explore the underlying mechanisms of the leaders' impact. In this regard, the Social Identity Approach to Leadership [34] proposed that leaders can impact the team's functioning to the extent that they can manage a shared team identification. Although this theory originates from organizational literature, the study findings provided further evidence for the application of this leadership approach in sports settings.

More specifically, in line with H3, the study findings confirmed that team identification fully mediated the relation between both coach and athlete leadership quality and task and social cohesion. As such, it can be inferred that previous findings for coaches [2] can also be applied to athlete leaders. With regard to team confidence, it was found that team identification only partially mediated the impact of the coach's leadership quality on team outcome confidence. This result points to the existence of other mechanisms through which coaches affect their teammates' team outcome confidence. In this regard, verbal persuasion and modeling confidence and success were proposed as likely avenues for leaders' influence on players' team confidence [22, 54].

In contrast with H3, team identification did not act as a mediator in the relation between athlete leadership quality and athletes' collective efficacy, which contrasts previous research findings [24, 26, 27]. Instead, a strong direct link emerged between athlete leadership

quality and teammates' collective efficacy, which might be attributed to other mechanisms than team identification, such as verbal persuasion or modeling confidence [10, 22].

With the exception of the relation with collective efficacy, team identification did mediate coaches' and athlete leaders' influence on team outcome confidence, task cohesion, and social cohesion. Hence, we conclude that high-quality team leadership inspires a feeling of 'us' rather than feeling like a group of individuals, which in turn fosters an optimal team functioning, characterized by increased levels of team confidence and team cohesion.

Strengths, Limitations, and Avenues for Further Research

The present study advances upon previous research by demonstrating that both coaches and athlete leaders have a unique impact on both team confidence and team cohesion. In addition, increasing members' identification with the team was found to be an important mechanism underlying the observed relations, thereby supporting the Social Identity Approach to Leadership [34]. Moreover, the stratified sample consisting of athletes, playing at high and low level, in three different sports, allowed to us generalize our findings across performance level and sport. The consistency in the relations across performance level and across sport testifies to the reliability and generalizability of the study's findings.

Despite these strengths, a number of limitations are inherent to the study design. Given the particular focus on team sport athletes, the generalizability of our findings to individual athletes competing in teams (e.g., relay race, cycling) remains to be investigated. Furthermore, given the cross-sectional nature of our data, no causal influences can be inferred. Based on a longitudinal study in elite handball teams [39], we assumed that team confidence would predict team cohesion and the good fit of the SEM models provided support for this assumption. However, it is likely that the relation between team confidence and team cohesion constitutes a reciprocal relation, because recent studies suggested that team cohesion can also influence team confidence [42, 55]. Future research could adopt an experimental

design to verify the direction of the relation between team confidence and team confidence.

Furthermore, such experimental research could confirm our assumption that both coaches and athlete leaders impact the team functioning.

Because our study revealed that the quality of both coach and athlete leadership each uniquely contributed to the creation of an optimal team environment, intervention studies could apply these findings into practice. More specifically, researchers could create a structure of shared leadership in the team by formalizing athletes as task, motivational, and social leader. Selecting these athlete leaders based on the perceptions of the other players by using social network analysis [for an example, see 14] will ensure that players accept the appointed leaders as their leaders, and as such constitutes a good strategy to strengthen the perceived athlete leadership quality. In this way, intervention studies can provide a deeper insight in the impact of a shared leadership structure on team outcomes, such as team confidence and team cohesion, but also motivational climate and performance.

Practical Implications

The study findings emphasize that although coach leadership is important, also athlete leaders have the power to uniquely contribute to an optimal team environment. As such, coaches should not rely only on their own leadership, but should also try to foster a structure of shared leadership. This viewpoint has also been adopted in recent theorizing on servant leadership [56, 57]. In contrast to traditional leadership approaches (i.e., coach as only leader of the team, hierarchically positioned above the athletes), a servant coach is primarily concerned with serving others and shares the power amongst team members. In this regard, our findings further corroborate previous research indicating a positive impact of servant leadership on team confidence [58] and team cohesion [59].

Furthermore, it is important to keep in mind that in addition to coach and athlete leadership in general, also the quality of each of the specific leadership roles (i.e., task,

615 motivational, and social leader) was positively related with team identification, team
616 confidence, and team cohesion. Therefore, it can be recommended that coaches identify
617 athlete leaders on each of the leadership roles. Indeed, previous research revealed that the
618 more leadership roles were occupied in the team, the stronger athletes' team confidence, the
619 higher their team identification, and the better the team was placed in the ranking [13].
620 Moreover, after identifying the athlete leaders, coaches should invest sufficient time to guide
621 their athlete leaders in improving their leadership abilities, given that their perceived
622 leadership quality proved to be essential for an optimal team functioning.

623 We can conclude that coaches, together with their athlete leaders, can inspire players
624 to identify with their team. The shared feeling of 'us' rather than being a group of I's will in
625 turn create a stronger confidence in obtaining the goals and will foster the task and social
626 cohesion within the team. By sharing the lead and working together, an optimal team
627 environment can be created.

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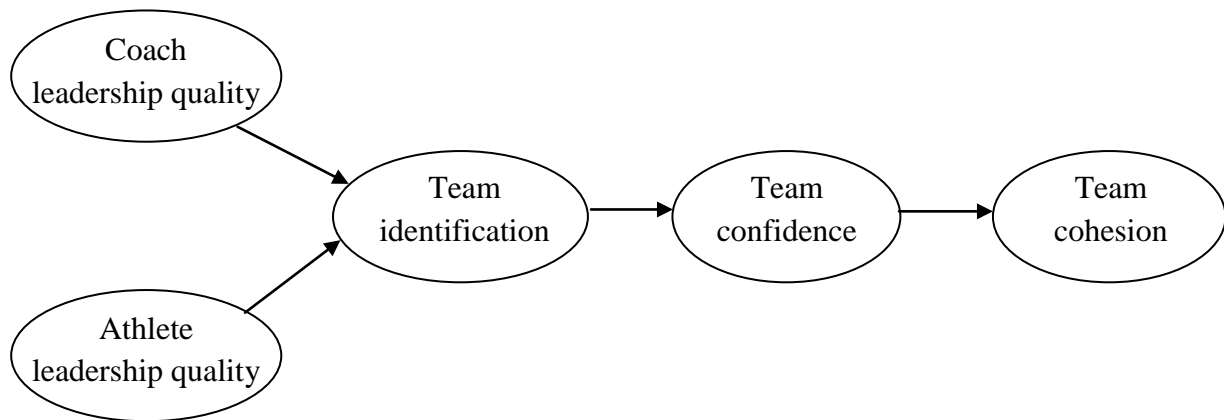
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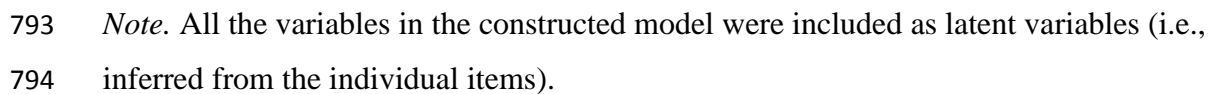
784 *Figure 1.* The hypothesized model, with team identification underpinning the impact of coach
785 and athlete leadership on both team confidence and team cohesion.



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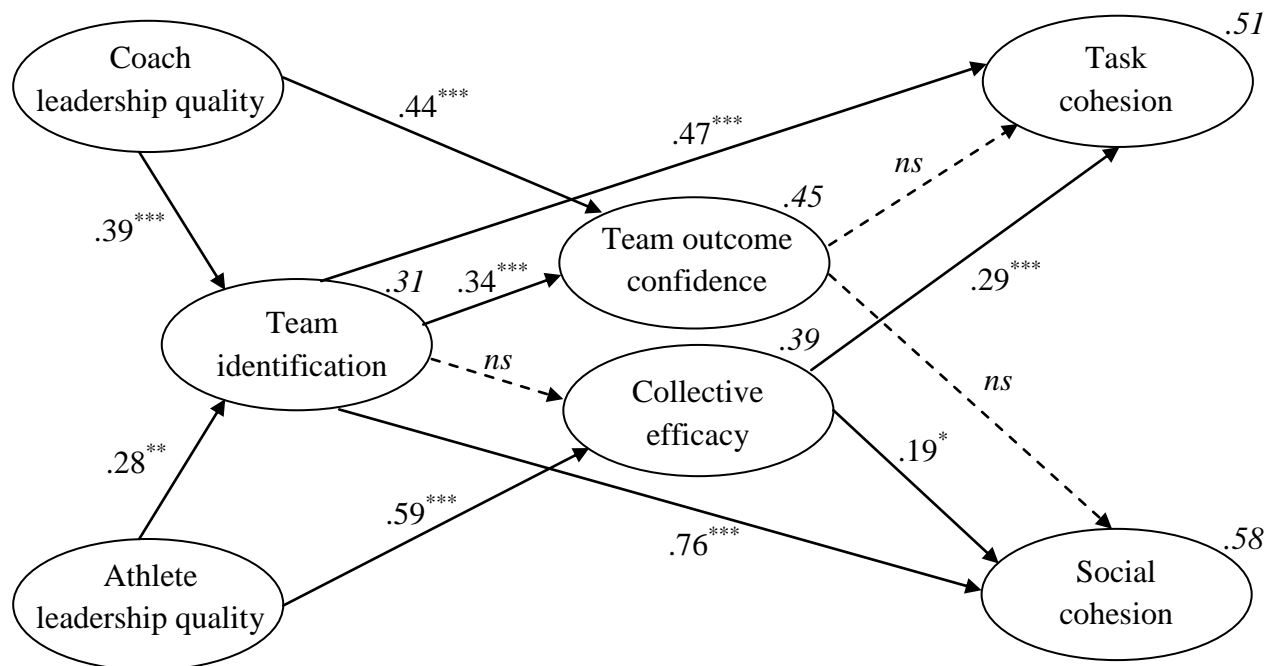
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796 *Figure 3.* The overarching model, with team identification mediating the impact of coach and
 797 athlete leadership on both team confidence and team cohesion. ** $p < .01$; *** $p < .001$.



798

799 *Note.* All the variables in the constructed model were included as latent variables (i.e.,
 800 inferred from the individual items).

801

802 Table 1.

803 *The number of participants in terms of sport, sex, and level.*

	Total sample	High level			Low level		
		Male	Female	Total	Male	Female	Total
Soccer	130	40	30	70	33	27	60
Volleyball	81	22	23	45	21	15	36
Handball	132	44	41	85	22	25	47
Total	343	106	94	200	76	67	143

804

805

806 Table 2.

807 *Means, standard deviations, and correlations between all the included variables.*

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.
1. Coach leadership quality	1.40	1.22		.20***	.29***	.24***	.53***	.36***	.24***
A. Coach as task leader ^a	1.60	1.29	.81***	.20***	.25***	.21***	.50***	.38***	.23***
B. Coach as motivational leader ^a	1.35	1.50	.89***	.15**	.26***	.22***	.50***	.31***	.22***
C. Coach as social leader ^a	1.25	1.45	.88***	.17**	.23***	.20***	.38***	.25***	.19***
2. Athlete leadership quality	1.96	.74			.35***	.40***	.19***	.35***	.34***
A. Athlete as task leader ^a	1.87	.97	.19**	.83***	.32***	.29***	.08	.35***	.37***
B. Athlete as motivational leader ^a	2.00	.84	.16**	.83***	.28***	.38***	.18**	.27***	.27***
C. Athlete as social leader ^a	2.10	.80	.18**	.80***	.27***	.34***	.17**	.17**	.15*
3. Team identification	1.93	.98				.34***	.40***	.56***	.64***
4. Collective efficacy ^b	4.93	1.02					.35***	.52***	.34***
5. Team outcome confidence ^a	1.57	1.35						.45***	.25***
6. Task cohesion ^c	6.45	1.30							.67***
7. Social cohesion ^c	6.47	1.42							

808 * $p < .05$; ** $p < .01$; *** $p < .001$. ^aThese scales were measured on a scale ranging from -3 to 3.809 ^bThe OCESS was measured on a scale ranging from 1 to 7, in line with guidelines of Fransen,810 Kleinert, et al. (2014). ^cThe GEQ was measured on a scale ranging from 1 to 9, in line with

811 guidelines of Carron et al. (1985).

812

Table 3.

The standardized beta regression weights (β) of the relations between both coach and athlete leadership and the five different outcome variables, including the significance level (p) and the 95% confidence intervals (CI) and the total percentage of explained variance (R^2).

	R^2	Coach leadership quality		Athlete leadership quality	
		β	CI	β	CI
Team identification	.31	.39 ^{***}	[.24 – .53]	.28 ^{**}	[.11 – .45]
Collective efficacy	.39	.10	[-.07 – .27]	.58 ^{***}	[.41 – .75]
Team outcome confidence	.38	.60 ^{***}	[.46 – .74]	.04	[-.13 – .22]
Task cohesion	.33	.54 ^{***}	[.39 – .69]	.08	[-.11 – .27]
Social cohesion	.25	.38 ^{***}	[.20 – .56]	.22 [*]	[.00 – .43]

* $p < .05$; ** $p < .01$; *** $p < .001$

819 Table 4.

820 *Total effects (TE), significance levels (p) and 95% confidence intervals (CI) for all paths in*
 821 *the postulated model.*

	CLQ		ALQ		TI		CE		TOC	
	<i>TE</i>	<i>CI</i>	<i>TE</i>	<i>CI</i>	<i>TE</i>	<i>CI</i>	<i>TE</i>	<i>CI</i>	<i>TE</i>	<i>CI</i>
TI	.25 ^{***}	[.14 – .37]	.41 ^{**}	[.13 – .69]						
CE	.02	[-.04 – .07]	1.07 ^{***}	[.67 – 1.47]	.08	[-.14 – .29]				
TOC	.54 ^{***}	[.38 – .70]	.20 [*]	[.03 – .37]	.49 ^{***}	[.24 – .74]				
TC	.26 ^{***}	[.13 – .39]	.69 ^{***}	[.35 – 1.03]	.79 ^{***}	[.51 – 1.07]	.36 ^{**}	[.15 – .56]	.14	[-.04 – .33]
SC	.21 ^{**}	[.06 – .36]	.67 ^{**}	[.29 – 1.05]	1.06 ^{***}	[.76 – 1.36]	.23 [*]	[.03 – .44]	-.14	[-.32 – .04]

822 ^{*} $p < .05$; ^{**} $p < .01$; ^{***} $p < .001$

823 *Note.* CLQ = coach leadership quality; ALQ = athlete leadership quality; TI = team
 824 identification; CE = collective efficacy; TOC = team outcome confidence; TC = task
 825 cohesion; SC = social cohesion.

826

827 Appendix A

828 *Fit indices for the factor structure of team identification, team outcome confidence, collective*
 829 *efficacy, and task and social cohesion, separately at high and low level, and for the three*
 830 *different sports.*

	χ^2/df	CFI	TLI	RMSEA	<i>pclose</i>	SRMR
High level	2.24	.94	.92	.08	< .001	.06
Low level	1.58	.96	.95	.07	.11	.05
Soccer	1.81	.94	.92	.08	.01	.06
Volleyball	1.78	.91	.88	.10	< .001	.08
Handball	1.80	.94	.93	.08	.01	.06

831

832

833 Appendix B

834 *Fit indices, at high and low level and for the different sports, for the structural model,*
 835 *demonstrating that team confidence (i.e., team outcome confidence and collective efficacy)*
 836 *partly mediates the relationship between team identification and team cohesion (task and*
 837 *social cohesion).*

	χ^2/df	CFI	TLI	RMSEA	p_{close}	SRMR
High level	2.24	.94	.95	.08	.001	.06
Low level	1.58	.96	.95	.07	.11	.05
Soccer	1.86	.94	.92	.085	< .001	.06
Volleyball	1.75	.91	.88	.097	< .001	.07
Handball	1.80	.94	.93	.079	.01	.06

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